SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT *ENGINEERING and COMPLIANCE* **APPLICATION PROCESSING AND CALCULATIONS**	PAGES 7	PAGE 1
	APPL. NO. Below	DATE 9.13.09
	PROCESSED BY T. Iwata	CHECKED BY

Rohr, Inc.
8200 Arlington Ave.
Riverside, CA 92503
ID no.: 800113

EQUIPMENT DESCRIPTION:

Equipment	ID No.	Connected To	Source Type/ Monitoring Unit	Emissions	Conditions
Process 20: LASER CUTTING					
CUTTER, R & D PROTOTYPE, LASER, MODEL NO. YLP-1/100/20, 220 WATTS MAXIMUM A/N: 501000 Permit to Construct Issued:	D248	C249		PM: RULE 405	B59.10, C1.20, D323.1, E57.1, E147.1, E193.2
DUST COLLECTOR, FUMEX, FA1, WITH ONE POLYESTER PREFILTER, ONE MERV 11 PANEL FILTER, ONE HEPA, & ONE 5 POUND ADSORBER (CARBON AND ALUMINA ~~ALUMINUM~~ IMPREGNATED WITH POTASSIUM PERMANGANATE) A/N: 496103 Permit to Construct Issued: 05/12/09	C249	D248		PM: RULE 404	C6.19, D29.1, D90.2, D322.4, D381.2, E102.1, E193.2, K67.1

A/N 500137: TITLE V PERMIT REVISION APPLICATION

BACKGROUND:

Rohr submitted application no. 501000 to change conditions for a R&D laser cutter that was issued a PC under application no. 496102. Under the PC, Rohr is only allowed to cut prepreg test panels. They now want to cut prepreg, adhesive film and peel ply solid film test panels. One of the new prepreg test panels is manufactured using methyl ethyl ketone and as a result of the cutting, emissions of methyl ethyl ketone may be generated. Rohr, however, is not proposing to increase the amount of material cut by the laser. The following are the changes to the conditions. The strikethrough items are deletions and the underlined items are additions.

B59.10: The operator shall not use the following material(s) in this device :

Materials containing any toxic air contaminants (TAC) listed in Table 1 of Rule 1401, except methyl ethyl ketone, with an effective date of June 5, 2009 ~~March 7, 2008~~, or earlier.

C1.20: The operator shall limit the material processed to no more than 15 lb(s) in any one calendar month.

For the purpose of this condition, material processed shall be defined as the total weight of material being cut by the laser.

For the purpose of this condition, material processed shall be defined as resin impregnated carbon fiber, resin impregnated fiberglass, epoxy film adhesive, and peel ply material.

To comply with this condition, the operator shall maintain records of the type of material used, total length, width, and thickness of the material being cut

The operator shall maintain records in a manner approved by the District, to demonstrate compliance with this condition.

E147.1: The operator shall only conduct the processing of resin impregnated carbon fiber, resin impregnated fiberglass, epoxy film adhesive, and peel ply material in this equipment.

In addition to changes made to the laser cutter's conditions, the wording of the dust collector of device no. C249 will be changed slightly to better describe the equipment. The corrections are noted in the above equipment description as underline and strikethrough items.

Rohr is a RECLAIM/Title V facility. A Title V renewal permit was issued to this facility on May 9, 2005. Rohr has proposed to revise their Title V renewal permit (with application no. 500137) by changing the conditions for the laser cutter. This permit revision is considered a "de minimis significant permit revision" to the Title V renewal permit, as described in the Regulation XXX evaluation.

PROCESS DESCRIPTION:

Rohr manufactures aerospace components for commercial and military aircraft. They perform metal and composite material processing, structural bonding and assembly operations. Manufacturing processes conducted at this location include composite bonding, resin curing, core

stabilizing, primer and topcoat spray painting, roller coating, degreasing, solvent cleaning, metal surface preparation, abrasive blasting and tooling preparation.

The above laser cutting equipment is a prototype and is used to conduct preliminary testing and collecting necessary data for building much larger size equipment to be used for a full production in the future. The laser cutter is used to cut test panels which are representative of manufactured aircraft parts and are comprised of resin impregnated carbon fibers, resin impregnated fiberglass, epoxy film adhesive and peel ply epoxy resin film.

The volume of material removed is anticipated to be 0.753 in^3 for resin impregnated carbon fiber, 0.03 in^3 for resin impregnated fiberglass, 0.06 in^3 for adhesive film and 0.045 in^3 for peel ply material. Based on the individual densities of each material, the total amount of material removed per panel is 0.0459 pounds. At the processing rate of ten panels per day, the total amount of material removed will be 0.459 pounds. No more than ten panels will be processed per day since the processing time takes anywhere from one to three hours per panel. The laser cutter is operated up to 20 hr/day, 7 day/wk and 52 wk/yr.

EMISSIONS CALCULATIONS:

PM10 Emissions:
Operating the laser cutter results in particulate matter emissions. For PM10 emission estimates, it is assumed that 99% of material removed will be PM10 emissions, the remaining 1% contributes to VOC emissions.

Processing rate = 10 panels per day, 1 panel per hour
PM10 control efficiency = 99.97%
Uncontrolled hourly PM10 emissions = 0.0459 lb/panel x 0.99 = 0.0454 lb/panel
Uncontrolled daily PM10 emissions = 0.0454 lb/panel x 10 panel/day = 0.454 lb/day
Controlled daily PM10 emissions = 0.454 lb/day x (1 - 0.9997) = 1.36×10^{-4} lb/day
Controlled hourly PM10 emissions = 1.36×10^{-5} lb/hr

VOC Emissions:
It is assumed that 1% of the material removed contributes to VOC emissions.

Processing rate = 10 panels per day, 1 panel per hour
Hourly VOC emissions = 0.0459 lb x 0.01 = 4.59×10^{-4} lb/panel
Daily VOC emissions = 4.59×10^{-4} lb/panel x 10 hr/day = 4.59×10^{-3} lb/day

RISK ASSESSMENT

Methyl ethyl ketone is the only Rule 1401 toxic air contaminant (acute) listed in the material safety data sheets for the test panels. Assuming that all of the VOC emission emitted during the cutting process is MEK, emissions are considered negligible and there will not be an acute health hazard risk from this project.

RULE ANALYSIS

RULE 212 (c)(1): This section requires a public notice for all new or modified permit units that emit air contaminants located within 1,000 feet from the outer boundary of a school. The facility is not located within 1,000 feet of the outer boundary of a school.

RULE 212(c)(3): This section requires a public notice for all new or modified permit units with increases in emissions of toxic air contaminants listed in Table I of Rule 1401 resulting in a cancer risk equal or greater than one in a million. The proposed change of conditions will result in a slight increase in MEK emissions. However, the increase is negligible and there will not be an acute health hazard risk from this project.

RULE 212(g): This section requires a public notice for all new or modified sources that result in emission increases exceeding any of the daily maximums as specified by Rule 212(g). The proposed change of permit condition will not result in an emission increase exceeding the daily maximums.

	Maximum Daily Emissions					
	ROG	**NO_x**	**PM_{10}**	**SO_2**	**CO**	**Pb**
Emission increase	0	0	0	0	0	0
MAX Limit (lb/day)	**30**	**40**	**30**	**60**	**220**	**3**
Compliance Status	Yes	Yes	Yes	Yes	Yes	Yes

RULEs 401 & 402: Particulate emissions from the laser cutter are being vented to an air pollution control system consisting of a prefilter, a panel filter, and a hepa filter for particulate emission comtrol and a carbon adsorber for any VOC emission control. With the proper operation and maintenance of the air pollution control system, compliance with this rule is expected.

RULE 1303(a): PM emissions from the laser cutter are vented to a dust collector and HEPA filters. Potential PM10 emissions are controlled by 99.97%. VOC emissions are controlled by a carbon adsorber which satisfies BACT requirements.

RULE 1303(b)(1): Controlled hourly PM10 emissions are below 0.41 lb/hr. Modeling is not required.

RULE 1303(b)(2): Emission offsets are not required since the emissions associated with this equipment after control is negligible.

RULE 1303(b)(4): The facility is expected to be in full compliance with all applicable rules and regulations of the District.

RULE 1401: Toxics: Rule 1401 contains the following requirements:

1) *(d)(1) MICR and Cancer Burden* - The cumulative increase in MICR which is the sum of the calculated MICR values for all toxic air contaminants emitted from the new, relocated or modified permit unit will not result in any of the following:
   (A) an increased MICR greater than one in one million (1.0×10^{-6}) at any receptor location, if the permit unit is constructed without T-BACT;
   (B) an increased MICR greater than ten in one million (1.0×10^{-5}) at any receptor location, if the permit unit is constructed with T-BACT;
   (C) a cancer burden greater than 0.5.

2) *(d)(2) Chronic Hazard Index* - The cumulative increase in total chronic HI for any target organ system due to total emissions from the new, relocated or modified permit unit will not exceed 1.0 at any receptor location.
3) *(d)(3) Acute Hazard Index* - The cumulative increase in total acute HI for any target organ system due to total emissions from the new, relocated or modified permit unit will not exceed 1.0 at any receptor location.

According to the information that were submitted with these applications, Rohr, Inc. will be using material that contains toxic air contaminants (TAC) identified in Table 1 of Rule 1401. However, as indicated in the emission calculations, the MEK emissions from the laser is negligiable and passes a Tier I health risk assessment.

The laser cutter will be conditioned such that it will not be permitted to use any material containing any toxic air contaminants listed under Rule 1401 as amended June 5, 2009 except methyl ethyl ketone. Compliance is expected.

REGULATION XXX

The proposed project is considered as a "de minimis significant permit revision" for non-RECLAIM pollutants and hazardous air pollutants, and a "minor permit revision" for RECLAIM pollutants to the Title V permit issued to this facility.

Rule 3000(b)(6) defines a "de minimis significant permit revision" as any Title V permit revision where the cumulative emission increases of non-RECLAIM pollutants or hazardous air pollutants (HAP) from these permit revisions during the term of the permit are not greater than any of the following emission threshold levels:

Air Contaminant	Daily Maximum (lb/day)
HAP	30
VOC	30
NOx	40
PM10	30
SOx	60
CO	220

Rule 3003(j) specifies that a proposed permit for the initial Title V permit shall be submitted to EPA for review. To determine if a project is considered as a "de minimis significant permit revision" for non-RECLAIM pollutants or HAPs, emission increases for non-RECLAIM pollutants or HAPs resulting from all permit revisions that are made after the issuance of the Title V renewal permit shall be accumulated and compared to the above threshold levels. This proposed project is the 8th permit revision to the Title V renewal permit issued to this facility on May 9, 2005.

Revision	HAP	VOC	NOx*	PM10	SOx	CO
Previous Permit Revision Total	0	4	12	0	0	9
8th Permit Revision; change conditions for laser cutter (device no. D248)	0	0	0	0	0	0
Cumulative Total	0	4	12	0	0	9
Maximum Daily	30	30	40*****	30	60	220

* RECLAIM pollutant, not subject to emission accumulation requirements

Since the cumulative emission increases resulting from all permit revisions are not greater than any of the emission threshold levels, this proposed project is considered as a "de minimis significant permit revision" for non-RECLAIM pollutants or HAPs.

RECLAIM Pollutants

Rule 3000(b)(12)(A)(v) defines a "minor permit revision" as any Title V permit revision that does not result in an emission increase of RECLAIM pollutants over the facility starting Allocation plus nontradeable Allocations, or higher Allocation amount which has previously undergone a significant permit revision process.

Since NOx is a RECLAIM pollutant for this facility, a separate analysis shall be made to determine if the proposed permit revision is considered a "minor permit revision" for RECLAIM pollutants. The proposed change of permit condition will not result in an increase in NOx emissions. As a result, this proposed project is considered as a "minor permit revision" for RECLAIM pollutants.

RECOMMENDATION

The proposed project is expected to comply with all applicable District Rules and Regulations. Since the proposed project is considered as a "de minimis significant permit revision" for non-RECLAIM pollutants and hazardous air pollutants, and a "minor permit revision" for RECLAIM pollutants, it is exempt from the public participation requirements under Rule 3006 (b). A proposed permit incorporating this permit revision will be submitted to EPA for a 45-day review pursuant to Rule 3003(j). If EPA does not raise any objections within the review period, a revised Title V permit with conditions (as specified in the sample facility permit) will be issued to this facility.